Eminent Scientists

ANDRE MARIE AMPERE

AMPERE was born at Potemieux near Lyons in France in 1775, From his boyhood he developed an interest in reading mathematics. In 1801, he became Professor of Physics and Chemistry of the Central School of the department of Ain. In 1804, he was appointed a Professor of Mathematics at Lyons. During his stay at Lyons, he wrote a treatise on Theoretical Mathematics, including electrodynamical theory and identity of electricity and magnetism.

Ampere's main field was electrodynamics and his major discoveries were about the effects of the flow of an electric current. According to the Danish physicist Oersted, a pivoted magnetic needle turned at right angles to a conductor carrying a current. Ampere formulated a rule (*Ampere's rule*) for straight conductors, showing the direction and the circular shape of the magnetic field produced by a flowing electric current. The rule also predicted the way a magnetic needle is invariably deflected at right angles to straight-wire conductors.

Ampere proved that when the current flowed parallelly in the same direction, there was a force of attraction while there was a force of repulsion when it flowed in opposite directions. In an exact mathematical form, he also fixed the relationship between the electric currents, the distance between the two wires and the forces of attraction and repulsion. About circular conductors, he discovered that the strength of the magnetic field increased with the increase in the number of turns of the wire, and that at each open end of the coil, there were opposite magnetic poles. As a mark of respect to the distinguished scientist, the electrical unit of current strength is named after him. Ampere died on 10 June 1836.